

WHAT IS CLAIMED IS:

1. A conveyor belt scraper tensioning device including:

a support member mounted to at least partially rotate about a first axis, the support member being radially spaced apart from the first axis and having a scraper blade bracket for securing a scraper blade thereto;

a torsion bar located substantially along the first axis for imparting a torsional bias to the support member, the torsion bar having a first portion connected to the support member and a further portion spaced apart from and at least partially rotatable relative to the support member; and

a lever member connected to the further portion of the torsion bar at a location spaced apart from the first portion for imparting torsional bias on the torsion bar.

2. The device of claim 1 wherein the support member is an elongate tubular member defined by an outer wall on which the scraper blade bracket is located, the torsion bar being substantially located within the tubular member.

3. The device of claim 2 wherein the tubular member has first and second ends, the first portion of torsion bar being connected to the tubular member near the second end of the tubular member, the lever member being connected to an end of torsion bar that extends beyond the first end of the tubular member.

4. The device of claim 3 wherein the first portion of the torsion bar is connected by a radially extending connector to the tubular member, and at least one radially extending bushing is located on the torsion bar within the tubular member for maintaining relative radial spacing between the tubular member and the torsion bar.

5. The device of claim 3 including first and second spaced apart bracket members supporting the first and second ends of the tubular member, respectively, the lever member being located adjacent the first bracket member and securable to the first bracket member

in a plurality of selectable positions for adjusting the torsional bias applied to the torsion bar.

6. The device of claim 5 wherein each of the first and second bracket members includes an outwardly projecting connector on which a weld plate is mounted for, prior to installation on a conveyor belt system, rotation about a second axis that is substantially parallel to the first axis and sliding movement along the connector lateral to the second axis.

7. The device of claim 1 including first and second spaced apart bracket members supporting the support member at opposite ends thereof, the lever member being located adjacent the first bracket member and securable to the first bracket member in a plurality of selectable positions for adjusting the torsional bias applied to the torsion bar.

8. The device of claim 7 wherein each of the first and second bracket members includes an outwardly projecting connector on which a weld plate is mounted for, prior to installation on a conveyor belt system, rotation about a second axis that is substantially parallel to the first axis and sliding movement along the connector lateral to the second axis.

9. The device of claim 1 including a scraper blade removably mounted to the scraper blade bracket, the scraper blade being reversible with first and second opposite ends that each have a scraping edge for scrapping the conveyor belt.

10. The device of claim 10 wherein the scraper blade includes a row of openings along a center line between the first and second opposite ends thereof, the blade being secured to the scraper blade bracket by fasteners extending through the openings.

11. In combination with a conveyor belt system having a conveyor belt mounted to a support frame, a scraper blade support device including:

a tubular member mounted at opposite ends to the support frame and at least partially rotatable about an axis that is substantially transverse to a direction of travel of the conveyor belt;

a scraper blade extending outward from the tubular member and having an end for engaging the conveyor belt for removing material therefrom;

a torsion bar extending along the axis inside the tubular member, the torsion bar having a first portion rigidly attached to the tubular member for imparting a torsional bias thereto and a further portion partially rotatable relative to the tubular member; and

a lever member connected to the further portion of the torsion bar remote from the first portion for imparting a torsional bias to the torsion bar.

12. The device of claim 11 wherein the elongate tubular member is defined by an outer wall on which a scraper blade bracket is located, the scraper blade being removably mounted to the scraper blade bracket.

13. The device of claim 12 wherein the scraper blade is reversible with first and second opposite ends that each have a scraping edge for scrapping the conveyor belt.

14. The device of claim 13 wherein the scraper blade includes a row of openings along a center line between the first and second opposite ends thereof, the blade being secured to the scraper blade bracket by fasteners extending through the openings.

15. The device of claim 11 wherein the tubular member has first and second ends, the first portion of torsion bar being connected to the tubular member near the second end of the tubular member, the lever member being connected to an end of torsion bar that extends beyond the first end of the tubular member.

16. The device of claim 15 wherein the first portion of the torsion bar is connected by a radially extending connector to the tubular member, and at least one radially extending

bushing is located on the torsion bar within the tubular member for maintaining relative radial spacing between the tubular member and the torsion bar.

17. The device of claim 15 including first and second spaced apart bracket members connected to the support frame and supporting the first and second ends of the tubular member, respectively, the lever member being located adjacent the first bracket member and securable to the first bracket member in a plurality of selectable positions for adjusting the torsional bias applied to the torsion bar.

18. The device of claim 17 wherein the lever member has a securing opening therethrough that can be selectively aligned with openings provided through the first bracket member corresponding to the plurality of selectable positions and including a locking pin for insertion through the securing opening and an aligned one of the openings through the first bracket member to secure the lever member.